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DIGIMARC CORPORATION  
19801 SW 72ND AVENUE  
SUITE 100  
TUALATIN, OR 97062

EXAMINER

MILLER, RYAN J

ART UNIT PAPER NUMBER

2621

DATE MAILED: 02/12/2004

*a*

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/659,125

Applicant(s)

DAVIDSON ET AL.

Examiner

Ryan J. Miller

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2000 and 14 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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### **DETAILED ACTION**

1. The amendment received on November 14, 2003 has been entered in full. An updated search led to the discovery of pertinent prior art. Therefore, this action is non-final.

#### ***Response to Arguments***

2. Applicant's arguments filed November 14, 2003 have been fully considered. A response to these arguments follows.

#### **Drawing Objections**

*Summary of Argument:* The applicant argues that the objections to the drawings should be withdrawn in light of the replacement figure and the amendment to the specification (see applicant's remarks: page 9, paragraphs 8 and 9).

*Examiner's Response:* The examiner agrees. The objections to the drawings have been withdrawn.

#### **37 CFR 1.75 Claim Objections**

*Summary of Argument:* With regard to claim 7, the applicant argues that the phrase "that are likely to include a watermark signal" is definite, particularly in light of the specification. The specification describes how the system determines whether a block is "likely" to include a watermark signal at pages 6 and 7 of the specification (see applicant's remarks: page 9, paragraph 10). Regarding claim 18, the applicant argues that the specification specifically describes an embodiment where an encoding process is performed in response to a detecting process at page 15, lines 6-7 (see applicant's remarks: page 10, paragraph 1).

*Examiner's Response:* The examiner finds the applicant's arguments persuasive. The claim objections have been withdrawn.

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Prior Art Rejections

**35 U.S.C. 102(b) and 102(e) rejections**

*Summary of Argument:* Regarding claim 6, the applicant argues that the cited passage from Suzuki et al. (U.S. Patent No. 5,612,810 A) discloses red stamp detection, not watermark detection as claimed. The applicant further argues that the watermark is embedded redundantly and varies in the image. Finally, the applicant argues that even if one considers that the red stamp corresponds to the claimed watermark, it does not vary in the image as claimed (see applicant's remarks: page 10, paragraph 5).

Regarding claim 7, the applicant argues that Suzuki et al. does not analyze blocks in the buffer as claimed to select blocks for watermark detection. Instead, Suzuki et al. stores four sets of binary data corresponding to predetermined areas on the banknote and, then, performs noise elimination and pattern reduction, calculates the center of the pattern, and finally, compares the pattern with a reference pattern (see applicant's remarks: page 11, paragraph 3).

Regarding claim 13, the applicant argues that Suzuki et al. fails to disclose the claimed combination of elements in the amended claim (see applicant's remarks: page 11, paragraph 5).

Regarding claim 16, the applicant argues that Bender does not teach the claimed method of image watermark encoding in a printing process. Bender's focus, in contrast, is on decoding the encoded mark in a print process in a manner that enables the printer to refuse or continue printing based on the decoding operations on threads of the image. Bender merely describes how to embed in threads, not how to embed in these threads during a printing process as claimed (see applicant's remarks: page 12, paragraph 1).

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*Examiner's response:* Applicant's arguments with respect to claims 6-9, 11, and 12 have been considered but are moot in view of the new ground(s) of rejection necessitated by the amendment.

Regarding claim 7, the examiner agrees that Suzuki et al. fails to disclose identifying overlapping blocks; however, there is no antecedent basis in the specification for this limitation. Also, if this element of the invention is critical enough to warrant arguments, then it should be incorporated into the independent claim. Both of these items will be addressed in the rejection and objection below.

Regarding claim 13, the examiner disagrees. Suzuki et al. discloses the claimed combination of elements in amended claim 13 as described in the rejection below.

Applicant's arguments with regard to claim 16 have been considered but are moot in view of new grounds of rejection.

### **35 U.S.C. 103(a) rejections**

*Summary of Argument:* Regarding claim 3, the applicant argues that the combination of Suzuki et al. (U.S. Patent No. 5,621,810 A) and Conley (U.S. Patent No. 5,689,626 A) fails to disclose that "the watermark decoding operation is performed in a printer driver executing in a computer as an image is being passed from an application program to a printer through the driver". The applicant further argues that the process of selecting the watermark file when printing described in Conley has nothing to do with watermark decoding as claimed.

Regarding claim 4, the applicant argues that the SYSTEM.INI program of Tillery, Jr. et al. (U.S. Patent No. 6,032,201 A) is not an application programming interface as claimed.

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Regarding claim 10, the applicant argues that the combination of Suzuki et al. and Conley fails to disclose the claimed combination. Specifically, Conley merely teaches using a first identifier in a document to find a background word or image to be printed on the document.

*Examiner's response:* Regarding claim 3, the examiner disagrees. The combination of Suzuki et al. and Conley disclose every element of the claim. The limitation in question is disclosed by Conley at column 3, lines 41-49. The reference describes that a printer driver determines a watermark based on a file identifier. Therefore, by using a file identifier to select a watermark, the system, in effect, decodes the watermark.

Regarding claim 4, the SYSTEM.INI program of Tillery, Jr. et al. does function as an application programming interface. Tillery, Jr. et al. describes that the SYSTEM.INI along with the configuration manager is used to up-date device configurations (i.e. application programming interface).

Regarding claim 10, the examiner disagrees. Claim 10 calls for "using information in the watermark to index related information about the image in a database". Conley discloses this limitation. Conley describes searching a database of watermarks (i.e. information about the image) based on an identifier (i.e. watermark) (see column 4, lines 51-53).

### ***Claim Objections***

3. The following quotation of 37 CFR § 1.75(d)(1) is the basis of objection:

(d)(1) The claim or claims must conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description. (See § 1.58(a)).

4. Claim 7 is objected to under 37 CFR § 1.75(d)(1) as lacking clear support or antecedent basis in the description. Claim 7 calls for "identifying potentially overlapping blocks that are

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likely to include a watermark signal”. This element of the claim, however, is not described anywhere in the specification. Figs. 1 and 2 show a block cache that appears to have overlapping blocks, but no description of these blocks as “potentially overlapping” is provided in the specification. Clarification of this issue is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 6 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 6 recites the limitation “the watermark decoding operable to decode a watermark that has been embedded redundantly in the image and varies in the image”. A watermark that is embedded redundantly in the image and varies in the image is not discussed anywhere in the specification. The specification describes that the watermark may modulate spatial domain pixel values in a selected color channel, modulate frequency coefficients, modulate signal amplitudes, etc. (see applicant’s specification: page 9, lines 19-28). This type of modulation is not equivalent to embedding a redundant and varying watermark as claimed. Clarification of this issue is required.

7. Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Claim 7 calls for “identifying potentially overlapping blocks that are likely to

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include a watermark signal” which the applicant considers critical or essential to the practice of the invention, but not included in the independent claim is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The applicant provides lengthy arguments in the remarks provided on November 14, 2003 as to why the step of “identifying potentially overlapping blocks that are likely to include a watermark signal” is critical to the invention. Therefore, the examiner requests that the elements of claim 7 be incorporated into independent claim 6.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki et al. (U.S. Patent No. 5,621,810 A).

As applied to claim 13, Suzuki et al. disclose an imaging system comprising: an imaging device for scanning or printing an image (see Fig. 2: As can be seen in the figure, a device is provided for scanning or printing an image.); a watermark decoder in communication with the imaging device for intercepting portions of an image as the portions pass from one stage of a printing or scanning process to another (see column 9, lines 42-47: The reference describes that a variety of scanning procedures are initiated. Prior to the completion of the scanning process, the



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CPU determines 4 likely areas (i.e. intercepting portions of an image as the portions pass from one stage to another) where the red stamp mark (i.e. the watermark) is located.), for performing a watermark decoding operation on each portion (see column 9, line 66 – column 10, line 29: The reference describes that a pattern matching is performed on each of the areas to determine if the level of correlation exceeds a certain threshold value. If the correlation exceeds the threshold value, then it is indicated that the red stamp mark is present and that the item is an authentic bill (i.e. performing a watermark decoding operation on each portion).); and for providing a result of the decoding operation before the printing or scanning process has completed for the image (see column 9, lines 23-25: The reference describes that if the item is determined to be authenticate, then the system executes a measure for preventing forgery (i.e. providing a result of the decoding operation). This measure is executed before the printing process is complete.), the decoder including a manager for selecting blocks for watermark decoding based on analysis of characteristics of the blocks indicated which blocks are likely to have a recoverable watermark signal (see column 9, lines 42-61: The reference describes that the areas (i.e. blocks) are stored (i.e. selected) in RAM 412 by the CPU (i.e. manager) and then scanned with a window of 2x2 pixels to determine blocks of black pixels and then perform pattern matching to determine if the block contains the red stamp (i.e. analyze characteristics of the blocks to indicate which blocks have the watermark).).

As applied to claim 14, Suzuki et al. discloses that the system includes a printer peripheral in communication with a computer, and a printer driver executing in the computer and incorporating the watermark decoder (see column 11, lines 17-19: The reference describes that

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the system can be utilized in a printer of the stand-alone type. Therefore the computer would be peripheral to and in communication with the printer.).

As applied to claim 15, Suzuki et al. discloses that the system includes a scanner peripheral in communication with a computer, and a scanner driver executing in the computer and incorporating the watermark decoder (see column 11, lines 17-19: The reference describes that the system can be utilized in a scanner of the stand-alone type. Therefore the computer would be peripheral to and in communication with the scanner.).

10. Claims 16, 19, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Ratnakar (U.S. Patent No. 6,556,688 B1).

As applied to claim 16, Ratnakar discloses a method of image watermark encoding in a printing process comprising: intercepting portions of an image as the portions pass from one stage of a printing process to another (see Fig. 4B and column 6, lines 9-10: The reference describes that the image data flows through the printing pipeline on a block-by-block basis. Therefore, portions of an image are intercepted as they pass from one stage of printing to another.); performing a watermark encoding operation on each portion (see Fig. 4B and column 4, lines 11-15: The reference describes that tiny modifications are made to each block of image data to embed the pid (i.e. perform watermark encoding).); and providing watermarked portions of the image to a subsequent stage in the printing process (see Fig. 4B: As can be seen in the figure, after a block of the image is embedded with the pid, it is provided to a subsequent stage in the printing process.).

As applied to claim 19, Ratnakar discloses encoding calibration data into the image that is operable to detect a watermark in a geometrically distorted version of the watermarked image

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(see column 9, lines 61-64: The reference describes that the system can detect a watermark by selecting a search space based on the encoded information (i.e. calibration data) that includes variations for rotation and offset (i.e. geometrically distorted version of the image)).

As applied to claim 20, which merely calls for a computer readable medium on which is stored software for performing the method of claim 16, Ratnakar discloses such a computer readable medium since all of the processing performed by Ratnakar is performed by computer.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Suzuki et al. (U.S. Patent No. 5,621,810 A) and Conley (5,689,626 A).

As applied to claim 3, Suzuki et al. discloses a method of image watermark decoding in a printing or scanning process comprising: intercepting portions of an image as the portions pass from one stage of the printing or scanning process to another (see column 9, lines 42-47: The reference describes that a variety of scanning procedures are initiated. Prior to the completion of the scanning process, the CPU determines 4 likely areas (i.e. intercepting portions of an image as the portions pass from one stage to another) where the red stamp mark (i.e. the watermark) is located.); performing a watermark decoding operation on each portion (see column 9, line 66 – column 10, line 29: The reference describes that a pattern matching is performed on each of the areas to determine if the level of correlation exceeds a certain threshold value. If the correlation

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exceeds the threshold value, then it is indicated that the red stamp mark is present and that the item is an authentic bill (i.e. performing a watermark decoding operation on each portion.); and providing a result of the decoding operation before the printing or scanning process has completed for the image (see column 9, lines 23-25: The reference describes that if the item is determined to be authenticate, then the system executes a measure for preventing forgery (i.e. providing a result of the decoding operation). This measure is executed before the printing process is complete.).

Claim 3 further calls for the watermark decoding operation to be performed in a printer driver executing in a computer. While the system of Suzuki et al. clearly has a CPU, the use of a printer driver to decode a watermark is not discussed. However, Conley et al., in the same field of endeavor of image watermarking, and the same problem solving area of decoding or detecting watermarks, discloses the use of a printer driver for associating a watermark file to a document and also for selecting the watermark file based on a file identifier (i.e. decoding the watermark) when printing the document (see column 3, lines 41-49).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Suzuki et al. by adding the use of a printer driver for decoding as taught by Conley et al. because “having the printer driver control printing ... introduces greater flexibility into the printing process”, since “the printer driver can examine entire pages for ... objects that need special processing prior to printing” (see Conley: column 2, lines 63-67).

As applied to claim 10, Suzuki et al. discloses a method of image watermark decoding in a printing or scanning process comprising: intercepting portions of an image as the portions pass from one stage of the printing or scanning process to another (see column 9, lines 42-47: The

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reference describes that a variety of scanning procedures are initiated. Prior to the completion of the scanning process, the CPU determines 4 likely areas (i.e. intercepting portions of an image as the portions pass from one stage to another) where the red stamp mark (i.e. the watermark) is located.); performing a watermark decoding operation on each portion (see column 9, line 66 – column 10, line 29: The reference describes that a pattern matching is performed on each of the areas to determine if the level of correlation exceeds a certain threshold value. If the correlation exceeds the threshold value, then it is indicated that the red stamp mark is present and that the item is an authentic bill (i.e. performing a watermark decoding operation on each portion).); and providing a result of the decoding operation before the printing or scanning process has completed for the image (see column 9, lines 23-25: The reference describes that if the item is determined to be authenticate, then the system executes a measure for preventing forgery (i.e. providing a result of the decoding operation). This measure is executed before the printing process is complete.); wherein the result of the decoding operation is used to trigger an action before printing or scanning of the image is complete (see column 9, lines 23-25: The reference describes that if the item is determined to be authenticate, then the system executes a measure for preventing forgery (i.e. trigger an action). This measure is executed before the printing process is complete.).

Claim 10 further calls for using information in the watermark to index related information about the image in a database. The system of Suzuki et al. uses the watermark to authenticate a document; however, the reference does not disclose using the watermark to index related information about the image in a database. Conley describes the use of a watermark for such a purpose (see column 2, line 67 – column 3, line 1 and column 4, lines 51-53: The

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reference describes that a watermark file is linked to a document and that during decoding the printer driver scans all of the files based on a first identifier to find a watermark file that links to the document (i.e. related information about the image in a database).).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Suzuki et al. by using information in the watermark to index related information about the image in a database as taught in Conley because a “minimal amount of space [is used] to link a watermark file to a document” (see Conley: column 6, lines 19-20). Therefore, a large amount of information can be linked to a document by embedding only a small amount of information in the watermark.

13. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Suzuki et al. (U.S. Patent No. 5,689,626 A) and Conley (U.S. Patent No. 5,621,810 A), as applied to claim 3 above, and further in combination with Tillery, Jr. et al. (U.S. Patent No. 6,032,201 A).

Claim 4 calls for the printer driver to include 16 bit code, the watermark operation to be implemented in 32 bit code, and the watermark operation to be invoked from the 16 bit code through an application programming interface of the 32 bit code. Claim 5 calls for the 16 bit code to pass image data to the 32 bit code over a 16 to 32 bit bridge, and the bridge to include code enabling the 32 bit code to access data structures in the 16 bit code. These elements are absent from the combination of Suzuki et al. and Conley. Tillery, Jr. et al. discloses such a feature (see Fig. 1: As can be seen in the figure, the printer driver 103 is 16- bit, the software client 104 is a 32-bit code, and the application programming interface is met by SYSTEM.INI 102. The figure also depicts a 16 to 32 bit bridge 108.).

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It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of Suzuki et al. and Conley by adding the type of printer driver interface as disclosed by Tillery, Jr. et al. because the use of such an interface allows "the drivers [to be] automatically enabled for the proper hardware" (see Tillery, Jr. et al.: column 2, lines 23-24). Therefore, the use of the interface taught by Tillery, Jr. et al. would allow for the watermarking system to be automatically used on any computer.

14. Claims 6, 8, 9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Suzuki et al. (5,621,810 A) and Kofune et al. (U.S. Patent No. 5,483,069 A).

As applied to claim 6, Suzuki et al. discloses a method of image watermark decoding in a printing or scanning process comprising: intercepting portions of an image as the portions pass from one stage of the printing or scanning process to another (see column 9, lines 42-47: The reference describes that a variety of scanning procedures are initiated. Prior to the completion of the scanning process, the CPU determines 4 likely areas (i.e. intercepting portions of an image as the portions pass from one stage to another) where the red stamp mark (i.e. the watermark) is located.); performing a watermark decoding operation on each portion (see column 9, line 66 – column 10, line 29: The reference describes that a pattern matching is performed on each of the areas to determine if the level of correlation exceeds a certain threshold value. If the correlation exceeds the threshold value, then it is indicated that the red stamp mark is present and that the item is an authentic bill (i.e. performing a watermark decoding operation on each portion).); and providing a result of the decoding operation before the printing or scanning process has completed for the image (see column 9, lines 23-25: The reference describes that if the item is determined to be authenticate, then the system executes a measure for preventing forgery (i.e.

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providing a result of the decoding operation). This measure is executed before the printing process is complete.); wherein the portions are buffered, and analyzed to select blocks for watermark detection operations (see column 9, lines 42-61: The reference describes that the areas (i.e. portions) are stored in RAM 412 (i.e. buffered) and then scanned with a window of 2x2 pixels to determine blocks of black pixels (i.e. select blocks for watermark detection operations).).

As applied to claim 8, Suzuki et al. discloses that the result of the decoding operation is used to trigger an action before printing or scanning of the image is complete (see column 9, lines 23-25: The reference describes that if the item is determined to be authenticate, then the system executes a measure for preventing forgery (i.e. trigger an action). This measure is executed before the printing process is complete.).

As applied to claim 9, Suzuki et al. discloses that the action includes stopping the printing or scanning of the image (see column 9, lines 25-30: The reference describes that a signal is sent to the printer unit to deposit black toner over the entire surface thereby disabling copying (i.e. stopping the printing or scanning).).

Claim 6 further calls for the watermark decoding to be operable to decode a watermark that has been embed redundantly in the image and varies in the image. Suzuki et al. discloses only a single watermark pattern on the bill; however, Kofune et al., in the same field of endeavor of image processing and the same problem solving are of banknote authentication, discloses a bill with multiple patterns (i.e. a watermark that is embedded redundantly and varies) (see Fig. 5(a)).



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It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Suzuki et al. by adding the use of additional watermark patterns as taught in Kofune et al. because the additional watermark patterns will add an additional level of security thus making it more difficult for a counterfeiter to forge the banknote.

As applied to claim 12, which merely calls for a computer readable medium on which is stored software for performing the method of claim 6, the combination of Suzuki et al. and Kofune et al. discloses such a computer readable medium since all of the processing performed by Suzuki et al. is performed by computer.

15. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Suzuki et al. (5,621,810 A) and Kofune et al. (U.S. Patent No. 5,483,069 A), as applied to claims 6 and 8 above, and further in combination with Rhoads (WO 97/43736).

Claim 11 calls for the action to include using information in the watermark to fetch a web page related to the image. This element is absent from the combination of Suzuki et al. and Kofune et al.; however, Rhoads, in the same field of endeavor of image watermarking, discloses such a feature (see page 80, lines 16-23: The reference describes that by selecting a read watermark option, a user can discover information relating to the image from an external source such as the World Wide Web.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of Suzuki et al. and Kofune et al. by adding the ability to use information in the watermark to fetch a web page related to the image as taught in Rhoads because such a system allows for a watermark containing a small amount of data to be embedded into an image and then linked to a large amount of data. Therefore, the watermark can

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be easily embedded into the image due to its relatively small size, and contain a large amount of information, since it is linked to a web page.

16. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ratnakar (U.S. Patent No. 6,556,688 B1) and Stefik et al. (U.S. Patent No. 5,629,980 A). The arguments as to the relevance of Ratnakar in the rejection of claim 16 above are incorporated herein.

Claim 17, which is representative of claim 18, calls for encoding tracer data into the image. Ratnakar discloses encoding authentication information into the image; however, the reference does not teach encoding tracer data. Stefik et al., in the same field of endeavor of image watermarking, discloses embedding tracer information (see column 48, lines 24-26).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Ratnakar by adding the use of tracer information as taught in Stefik et al. because embedding tracer information will "discourage unauthorized copying of print outs" (see Stefik et al.: column 48, lines 20-21).

### ***Conclusion***

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan J. Miller whose telephone number is (703) 306-4142. The examiner can normally be reached on M-F 8:00-4:30.

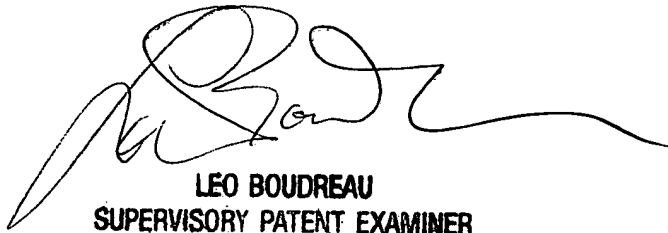
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Ryan J. Miller

Ryan J. Miller  
Examiner  
Art Unit 2621

  
**LEO BOUDREAU**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**